

### ABSTRACT OF THE DISCLOSURE

Production of light metal castings composed of magnesium or magnesium alloys, includes supplying a liquid metal first to a dosing chamber; pumping gas under pressure into the dosing chamber so as to press the liquid metal into a preliminarily evacuated mold nest; performing a production process within a system which is pressure-tightly closed from outside; performing heating of the liquid metal in a lower part of a melting device which adjoins a feed system; performing overheating of the liquid metal from a melting condition with a temperature of approximately 630°C to a rigidification condition at a tool side to a lower region of a valve seat; and supplying and withdrawing a protective gas by a differential pressure system.